

ABSTRACT

A strained silicon MOSFET employs a high thermal conductivity insulating material in the trench isolations to dissipate thermal energy generated in the MOSFET and to avoid self-heating caused by the poor thermal conductivity of an underlying silicon germanium layer. The high thermal conductivity material is preferably silicon carbide, and the isolations preferably extend through the silicon germanium layer to contact an underlying silicon layer so as to conduct thermal energy from the active region to the silicon layer.